

REMARKS

Claims 1-32 are currently pending. The specification is amended. Claims 1, 5, 7, 10, 14, 17, and 24 are also amended. Claims 33-37 are added. No new matter is presented. The foregoing amendments and following remarks are considered by Applicant to overcome each objection/rejection raised in the Office Action and to place the application in condition for allowance. Accordingly, Applicant requests reconsideration of claims 1-32.

The specification was objected to for containing informalities. The specification is amended to overcome each of the cited objections. No new matter is presented. Accordingly, Applicants request the withdrawal of the objection to the specification.

Claims 5, 7, 10, 14, 17, and 24 are objected to for containing informalities. These claims are amended to overcome the cited objections. No new matter is presented. The amendments to claims 5, 7, 10, 14, 17, and 24 are merely cosmetic in nature and do not affect the scope of the claims. Accordingly, Applicants request the withdrawal of the objection of claims 5, 7, 10, 14, 17, and 24.

Claims 1, 2, 7, 8, 10-15, 21, 22, 27, and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Claims 1, 2, 7, 8, 10-15, 21, 22, 27, and 29 are amended to more clearly recite the claimed invention. No new matter is presented. In view of these amendments Applicants request the withdrawal of rejection of Claims 1, 2, 7, 8, 10-15, 21, 22, 27, and 29 under 35 U.S.C 112.

The Examiner indicates that claim 1 is rejected because the feature of “said detection module being arranged at a spatial distance from the projection module” is unclear. Also, the Examiner states that it is unclear how the term “unit” can contain both the detection module and the projection module if they are at a spatial distance from each other. In the present invention,



the linking between the two modules is made by an optical fiber to make the two modules operate as a "unit". Since the projection module is arranged very close to the plasma (to detect the drops near the interaction point) and the detection module has to be protected from the heat, radiation, and the electro-magnetic pulses of the plasma, a fiber-optic connection between the two modules is provided. The light required for illumination of the target flow through the projection module is generated in the detection module is transmitted to the projection module through the fiber optic cable and after illuminating the targets and being reflected back, the reflected light is transmitted by the fiber again to reach the detector. Since the present invention provides optical sensing by the sensor unit, it is respectfully submitted that the projection module and the detection module are provided as a "unit".

With regard to the lines 17-18, the Examiner indicates that the feature "so that transmission light which is reflected from the detection point is received simultaneously by the projection module and is directed to the detection module" is unclear since it is not know what two events are happening simultaneously. Claim 1 is amended to more clearly recite the features of the present invention. In view of the above amendments and remarks, Applicants respectfully request the withdrawal of the rejection of claim 1 under 35 U.S.C. 112.

Claims 2, 7, 8, 10-13, 12-15, 21, and 22 are also amended to more clearly recite the features of the present invention. With regard to claims 27, Applicant submits that a short pulse laser with a high repetition rate is known to be used in the art. It is submitted that one skilled in the art would generally know the aspects of a short pulsed laser having a high repetition rate. Therefore, in view of the above amendments, Applicants respectfully request the withdrawal of the rejection of claims 1, 2, 7, 8, 10-13, 12-15, 21, and 22 under 35 U.S.C. 112.

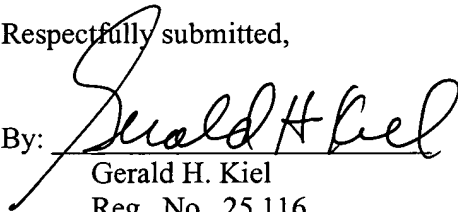


In view of the above amendments and remarks, it is respectfully submitted that the claims now clearly recite the patentable features of the present invention. Accordingly, reconsideration and withdrawal of the outstanding rejections and an issuance of a Notice of Allowance is respectfully requested.

Should the Examiner feel that a telephone conference with Applicant's attorney would expedite the prosecution of this application, the Examiner is urged to contact him at the number indicated below.

Respectfully submitted,

By:


Gerald H. Kiel

Reg. No. 25,116

November 14, 2005
REED SMITH LLP
599 Lexington Avenue
New York, NY 10022-7650
GHK:BS:aw
Enc.